US011834234B2

(12) **United States Patent**
Lozhko et al.

(10) **Patent No.: US 11,834,234 B2**
(45) **Date of Patent: Dec. 5, 2023**

(54) **PACKAGING FOR REEL-LESS BUNDLE OF CABLE**

(71) Applicant: **PPC BROADBAND, INC.**, East Syracuse, NY (US)

(72) Inventors: **Andriy Lozhko**, Syracuse, NY (US); **Noah P. Montena**, Syracuse, NY (US); **Jay A. Kisselstein**, Mexico, NY (US); **Brian K. Hanson**, Cicero, NY (US)

(73) Assignee: **PPC BROADBAND, INC.**, East Syracuse, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **17/491,489**

(22) Filed: **Sep. 30, 2021**

(65) **Prior Publication Data**

US 2022/0097900 A1 Mar. 31, 2022

Related U.S. Application Data

(60) Provisional application No. 63/085,997, filed on Sep. 30, 2020.

(51) **Int. Cl.**
B65D 85/66 (2006.01)
B65D 5/02 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***B65D 5/0209*** (2013.01); ***B65D 5/0236*** (2013.01); ***B65D 81/02*** (2013.01); ***B65D 85/04*** (2013.01)

(58) **Field of Classification Search**
CPC B65D 5/0209; B65D 5/0236; B65D 81/02; B65D 85/04; B65D 65/24; B65D 75/5844; B65D 81/03
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,772,850 A * 8/1930 Wheldon B65D 85/671 206/414
2,801,784 A * 8/1957 Blatt B65D 5/2033 206/397
(Continued)

FOREIGN PATENT DOCUMENTS

GB 537287 A 6/1941
GB 1187321 A 4/1970

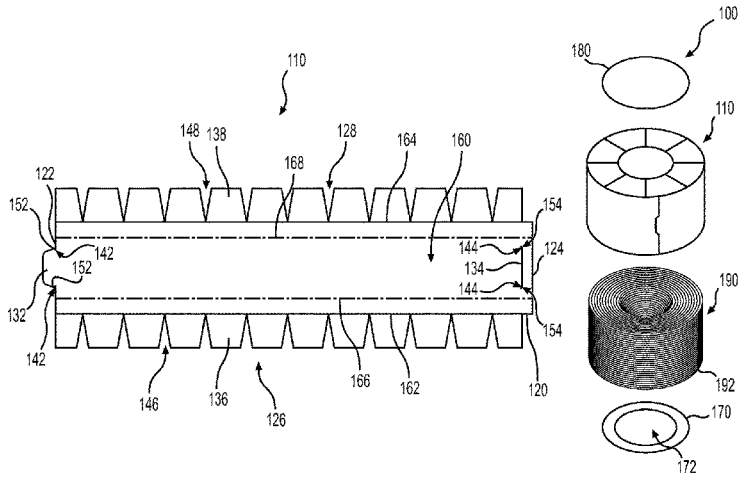
OTHER PUBLICATIONS

Search Report dated Dec. 14, 2021 in corresponding International Application No. PCT/US2021/053043, 5 pages.
(Continued)

Primary Examiner — Luan K Bui
(74) *Attorney, Agent, or Firm* — MH2 TECHNOLOGY LAW GROUP LLP

(57) **ABSTRACT**

A packaging arrangement for a bundle of cable includes a planar packaging blank extending in a longitudinal direction from a first end to a second end. The blank includes a middle region extending from the first end to the second end between a first fold line and a second fold line, a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the second side in a direction perpendicular to the longitudinal direction, and a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the first side in a direction perpendicular to the longitudinal direction. The blank is configured to be rolled into a cylindrical shape such that the first end overlaps the second end. The plurality of first flaps are configured to be folded radially inward relative to the cylindrical blank, and the plurality of second flaps are
(Continued)



configured to be folded radially inward relative to the cylindrical blank.

31 Claims, 2 Drawing Sheets

(51) **Int. Cl.**
B65D 81/02 (2006.01)
B65D 85/04 (2006.01)

(58) **Field of Classification Search**
USPC 206/389, 395–396, 398, 400, 407, 413, 206/414, 442
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,883,045	A *	4/1959	Abramson	B65D 85/672 229/87.01
3,837,597	A	9/1974	Bourhenne	
5,267,705	A	12/1993	Hofrichter et al.	
5,348,241	A	9/1994	Huette	
5,366,085	A *	11/1994	Kewin	B65D 85/66 206/407
5,551,647	A	9/1996	Browning	
5,873,464	A	2/1999	Haley	
6,814,232	B1 *	11/2004	Morris	B65D 85/04 206/400
6,935,502	B1	8/2005	Stoll et al.	
7,080,734	B1 *	7/2006	Morris	B65D 85/04 206/400
8,056,717	B2 *	11/2011	Weissbrod	B65B 25/24 206/400
9,796,556	B1	10/2017	Hill et al.	
2007/0295628	A1 *	12/2007	Uitenbroek	B65B 25/148 206/413
2010/0000895	A1 *	1/2010	Weissbrod	B65B 25/24 53/409

OTHER PUBLICATIONS

Written Opinion dated Dec. 14, 2021 in corresponding International Application No. PCT/US2021/053043, 6 pages.

* cited by examiner

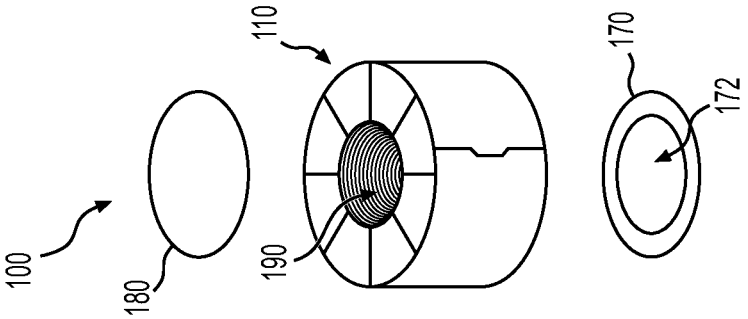


FIG. 3

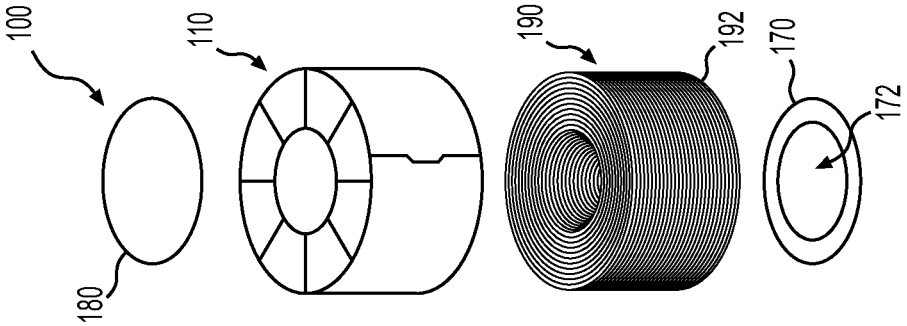


FIG. 2

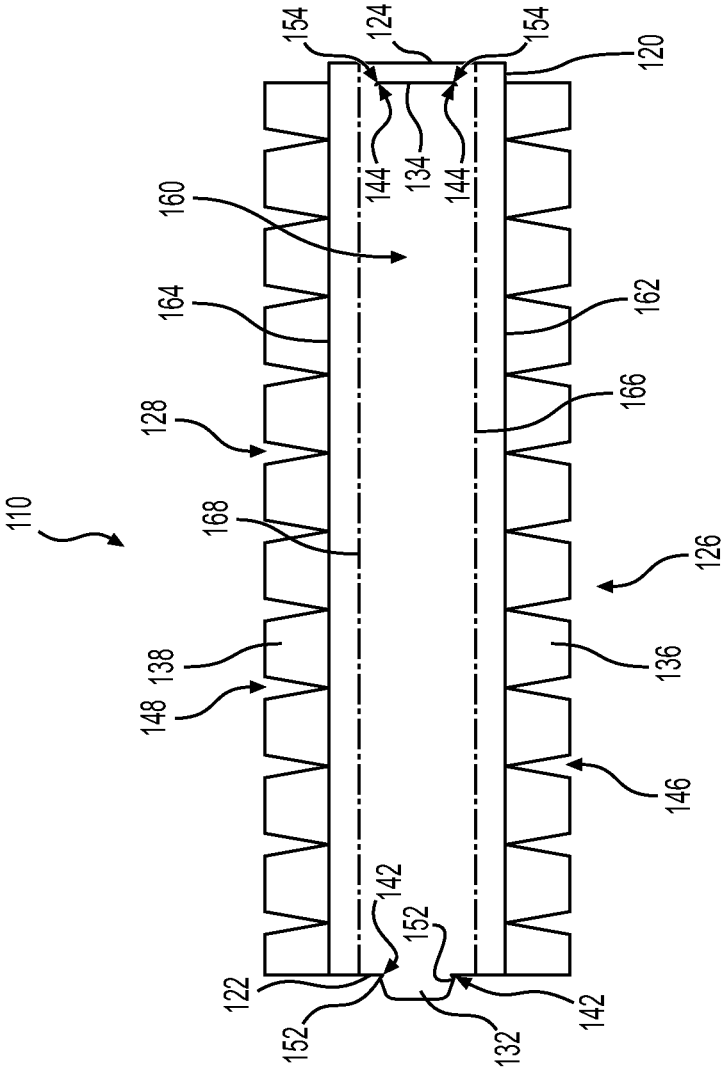


FIG. 1

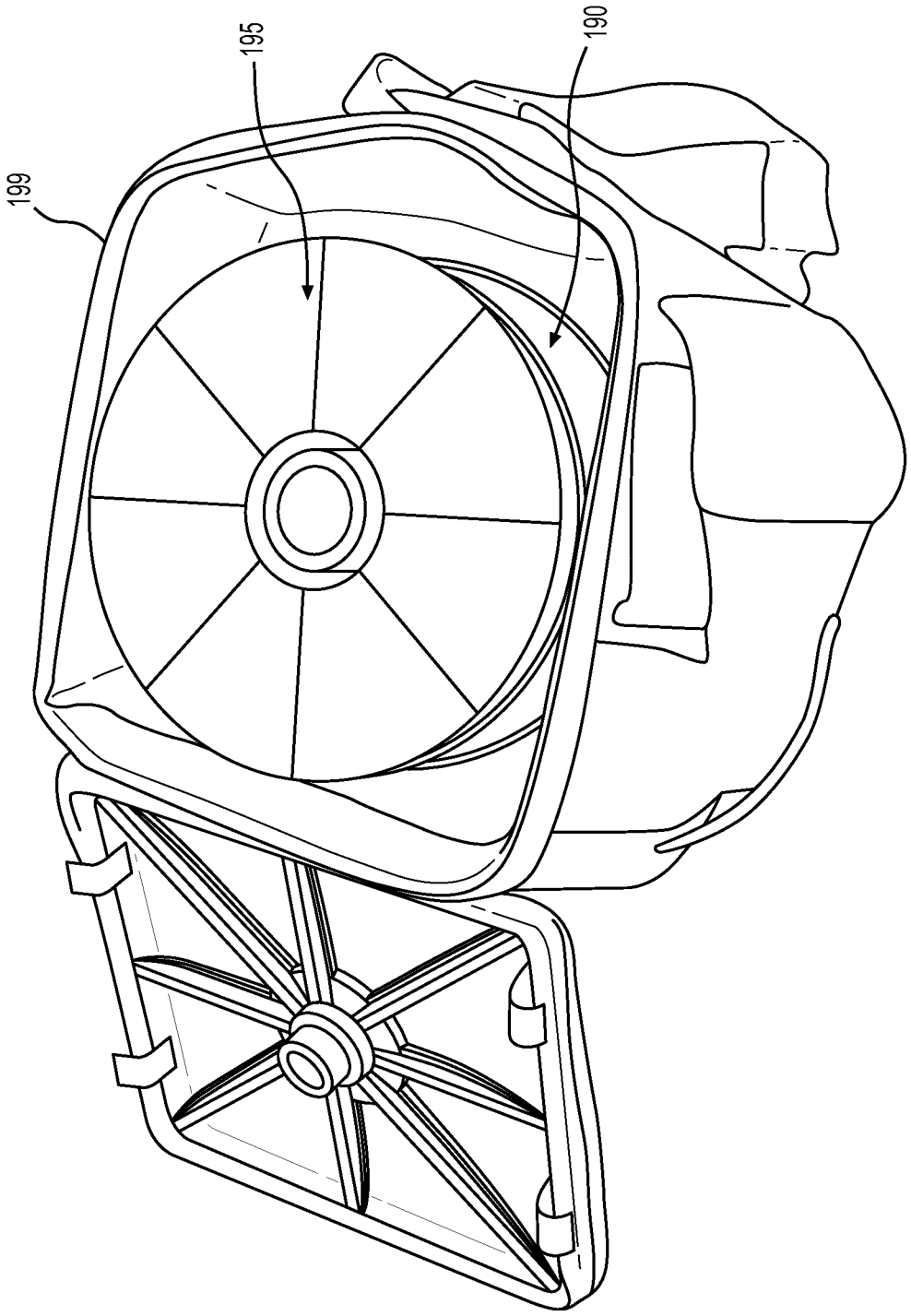


FIG. 4

PACKAGING FOR REEL-LESS BUNDLE OF CABLE

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 63/085,997, filed on Sep. 30, 2020. The disclosure of the prior application is hereby incorporated by reference herein in its entirety.

TECHNICAL FIELD

The present disclosure relates to packaging and, more particularly, to packaging for a reel-less bundle of cable, wire, and the like.

BACKGROUND

Many conventional types of packaging exist for cable, wire, and like (generally referred to as "cable"). For example, communication cable is often wound onto a reel or a spool, from which it can be easily paid out for use as needed. The reel-mounted cable is then packaged in a box for shipping and storage. Some conventional packaging boxes also include structures that permit payout of the cable while the cable remains in the box. With other conventional packaging boxes, the reel-mounted cable is removed from the box and mounted on a spindle for payout.

In other conventional packaging systems, cable is wound or rolled onto a temporary spool and removed from the spool before being packaged in a box or wrapped with shrink wrap for storage and shipping as a reel-less bundle of cable. Some box packaging permits reel-less bundles of cable to remain in the box while be paid out for use. The box packaging maintains the cable within the interior of the box. When all of the cable is paid out, the box can be recycled or otherwise disposed of, depending on the material of the box. Alternatively, the reel-less bundle of cable can be removed from the box and mounted on a reel for paying out. However, once removed from the box, the cable can become unraveled before the cable is mounted on the reel.

Similarly, for some shrink wrap packaging, the cable may be paid out from the center of the bundle while the shrink wrap maintains the outer perimeter of the bundle. With other shrink wrap packaging, the shrink wrap is removed, and the reel-less bundle of cable is mounted on a reel for paying out. Again, once the shrink wrap is removed, the cable can become unraveled before the cable is mounted on the reel. Also, when shrink-wrapped packaging is stacked for shipping and storage, the associated stresses are transferred directly to the cable, which could cause deformation of the cable, which could affect performance. Additionally, the plastic shrink wrap packaging is difficult to remove and typically requires a sharp tool to remove.

Therefore, it may be desirable to provide packaging for a reel-less bundle of cable that can be mounted on a reel for payout. It may be desirable to provide packaging for a reel-less bundle of cable that prevents the cable from unraveling until after the cable is mounted on the reel. It may also be desirable to provide packaging for a reel-less bundle of cable that can be removed from the bundle of cable without a tool. It may also be desirable to provide packaging for a reel-less bundle of cable that provides axial strength to the cable bundle during shipping and storage. It may also be desirable to provide packaging constructed of lighter material without sacrificing rigidity.

SUMMARY

According to an exemplary embodiment of the disclosure, a packaging arrangement for a bundle of cable includes packaging including a blank having a planar configuration and a cylindrical configuration, a first end panel, and a second end panel. In the planar configuration, the blank extends in a longitudinal direction from a first end to a second end. The planar configured blank includes a middle region extending from the first end to the second end in the longitudinal direction and extending between a first fold line and a second fold line in a direction perpendicular to the longitudinal direction, a tab extending from the first end in a direction away from the second end in the longitudinal direction, and a slit spaced from the first end. The planar configured blank also includes a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the second side in a direction perpendicular to the longitudinal direction, and a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the first side in a direction perpendicular to the longitudinal direction. In the cylindrical configuration, the blank is rolled such that the first end overlaps the second end, the slit is sized and configured to receive the tab when the blank is in the cylindrical configuration, the plurality of first flaps are folded toward one another such that the plurality of first flaps extend radially inward relative to the cylindrical configuration of the blank, and the plurality of second flaps are folded toward one another such that the plurality of second flaps extend radially inward relative to the cylindrical configuration of the blank. When the blank is in the cylindrical configuration and the plurality of first flaps and the plurality of second flaps are folded, the first end panel is attached to the plurality of first flaps to maintain the plurality of first flaps folded, and the second end panel is attached to the plurality of second flaps to maintain the plurality of second flaps folded.

In some aspects, the blank is configured to provide axial crush resistance to the packaging arrangement in the cylindrical configuration.

In various aspects, the blank is configured to receive a bundle of cable and provide axial crush resistance to the bundle of cable in the cylindrical configuration.

According to an exemplary embodiment of the disclosure, a packaging arrangement for a bundle of cable includes a packaging blank. In a first configuration, the blank extends in a longitudinal direction from a first end to a second end. The blank includes a middle region extending from the first end to the second end between a first fold line and a second fold line, a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the second side in a direction perpendicular to the longitudinal direction, and a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the first side in a direction perpendicular to the longitudinal direction. In a second configuration, the blank is rolled into a cylindrical shape such that the first end overlaps the second end, the plurality of first flaps are folded radially inward relative to the cylindrical blank, and the plurality of second flaps are folded radially inward relative to the cylindrical

blank, A first end panel is configured to be attached to the folded plurality of first flaps and a second end panel is configured to be attached to the folded plurality of second flaps when the blank is in the second configuration.

In some aspects, the blank is configured to provide axial crush resistance to the packaging arrangement in the second configuration.

According to various aspects, the blank is configured to receive a bundle of cable and provide crush resistance to the bundle of cable in the second configuration.

In various aspects, the blank is made from paper or fiberboard.

According to some aspects, the plurality of first flaps are delineated by a first plurality of V-shaped notches, and the plurality of second flaps are delineated by a second plurality of V-shaped notches.

In some aspects, the middle region of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end. According to various aspects, the first perforation line is spaced from the first fold line in a direction toward the second fold line, and the second perforation line is spaced from the second fold line in a direction toward the first fold line. According to some aspects, the first perforation line is coextensive with the first fold line, and the second perforation line is coextensive with the second fold line. In various aspects, the first end panel and the second end panel each comprise an adhesive backed paper or a sticker.

According to an exemplary embodiment of the disclosure, a packaging arrangement for a bundle of cable includes a planar packaging blank extending in a longitudinal direction from a first end to a second end. The blank includes a middle region extending from the first end to the second end between a first fold line and a second fold line, a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the second side in a direction perpendicular to the longitudinal direction, and a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the first side in a direction perpendicular to the longitudinal direction. The blank is configured to be rolled into a cylindrical shape such that the first end overlaps the second end. The plurality of first flaps are configured to be folded radially inward relative to the cylindrical blank, and the plurality of second flaps are configured to be folded radially inward relative to the cylindrical blank.

In some aspects, the packaging arrangement further comprises a first end panel configured to be attached to the plurality of first flaps when folded and a second end panel configured to be attached to the plurality of second flaps when folded.

According to various aspects, the blank is configured to provide axial crush resistance to the packaging arrangement when rolled into the cylindrical shape.

In various aspects, the blank is configured to receive a bundle of cable and provide crush resistance to the bundle of cable when rolled into the cylindrical shape.

According to some aspects, the blank is made from paper or fiberboard.

In some aspects, the plurality of first flaps are delineated by a first plurality of V-shaped notches, and the plurality of second flaps are delineated by a second plurality of V-shaped notches.

According to various aspects, the middle region of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end. In various aspects, the first perforation line is spaced from the first fold line in a direction toward the second fold line, and the second perforation line is spaced from the second fold line in a direction toward the first fold line. In some aspects, the first perforation line is coextensive with the first fold line, and the second perforation line is coextensive with the second fold line.

According to some aspects, the first end panel and the second end panel each comprise an adhesive backed paper or a sticker.

In various aspects, the blank includes a tab extending from the first end in a direction away from the second end in the longitudinal direction and a slit spaced from the first end, and the slit is sized and configured to receive the tab when the blank is rolled into the cylindrical shape.

The foregoing and other features of construction and operation of the invention will be more readily understood and fully appreciated from the following detailed disclosure, taken in conjunction with accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top plan view of a blank for packaging a reel-less bundle of cable.

FIG. **2** is an exploded perspective view of a packaging arrangement for a reel-less bundle of cable.

FIG. **3** is a partially exploded perspective view of the packaging arrangement of FIG. **2**.

FIG. **4** is a perspective view of the packaging arrangement of FIG. **2** in a carrying bag.

DETAILED DESCRIPTION OF EMBODIMENTS

As a preface to the detailed description, it should be noted that, as used in this specification and the appended claims, the singular forms "a," "an," and "the" include plural referents, unless the context clearly dictates otherwise.

An exemplary packaging arrangement **100** in accordance with various aspects of the disclosure is shown in FIGS. **2** and **3**. The packaging arrangement **100** includes packaging **110**, a first retaining member **170**, and a second retaining member **180**. The first and second retaining members **170**, **180** may be an adhesive-backed paper or a sticker. In the exemplary embodiment shown in FIGS. **2** and **3**, the first retaining member **170** is ring-shaped having an opening **172**, and the second retaining member **180** is circular. However, it should be appreciated that either of the first and second retaining members **170**, **180** may be ring-shaped or circular.

The packaging arrangement **100** is configured to package a bundle of cable, for example, a pre-rolled, reel-less bundle **190** of cable **192**. The cable **192** may be any communications cable, such as coaxial cable, fiber optic cable, etc., or wire, or the like.

Referring to FIG. **1**, a top plan view of an exemplary blank **120** for the packaging **110** is illustrated. The blank **120** can be made from paper or fiberboard (e.g., cardboard) that is recyclable to provide eco-friendly packaging. The blank **120** extends in a longitudinal direction from a first end **122** to a second end **124**. The blank **120** includes a middle region **160** extending from the first end **122** to the second end **124** in the longitudinal direction and extending between a first fold line **162** and a second fold line **164** in a direction perpendicular to the longitudinal direction.

A tab **132** extends from the first end **122** in a direction away from the second end **124** in the longitudinal direction. The blank **120** includes a slit **134** proximate to but spaced from the first end **122**. The slit **134** is sized and configured to receive the tab **132** when the blank **120** is formed into a cylinder with the first end **122** overlapping the second end **124**, as shown in FIGS. **2** and **3**. The tab **132** may include notches **142** adjacent, for example, immediately adjacent, to the first end **122**, and the slit **134** may include curved end portions **144** at its opposite ends. As would be understood by persons skilled in the art, when the tab **132** is inserted into the slit **134** after the blank **120** is formed into a cylinder, the notches **142** are configured to cooperate with the curved end portions **144** to prevent the tab **132** from slipping out of the slit **134**. For example, the widest sides **152** of the tab **132**, which are adjacent to the notches **142** tuck behind the regions **154** of the blank **120** adjacent the slit **134**.

As shown in FIGS. **2** and **3**, the blank **120** includes a first side **126** and a second side **128**. The first side **126** and the second side **128** extend from the first end **122** to the second end **124**. The first side **126** includes a plurality of first flaps **136** that are delineated by a plurality of V-shaped notches **146**. The first flaps **136** extend from the first fold line **162** in a direction away from the second side **128** in a direction perpendicular to the longitudinal direction. The second side **128** includes a plurality of second flaps **138** that are delineated by a plurality of V-shaped notches **148**. The second flaps **138** extend from the second fold line **164** in a direction away from the first side **126** in a direction perpendicular to the longitudinal direction.

The middle region **160** of the blank **120** includes first and second perforation lines **166**, **168** that extend from the first end **122** to the second end **124**. The first perforation line **166** is spaced from the first fold line **162** in a direction toward the second fold line **164**, and the second perforation line **168** is spaced from the second fold line **164** in a direction toward the first fold line **162**. The distance between the first perforation line **166** and the first fold line **162** and the distance between the second perforation line **168** and the second fold line **164** may be any desired distance. The first and second fold lines **162**, **164** may be generally parallel to one another and to the first and second perforation lines **166**, **168**. In some embodiments, the first perforation line **166** may be coextensive with the first fold line **162** and/or the second perforation line **168** may be coextensive with the second fold line **164**.

In a first configuration, the blank **120** is laid flat, as shown in the top plan view of FIG. **1**. In a second configuration, which is the packaging **110**, the blank **120** is formed into a cylinder with the first end **122** overlapping the second end **124**, as shown in FIGS. **2** and **3**. In the second configuration, the tab **132** is inserted into the slit **134** so that the blank **120** can maintain a cylindrical shape. In the second configuration, the first flaps **136** are folded toward one another such that the first flaps **136** extend radially inward relative to the cylindrical shape of the blank **120**. Similarly, the second flaps **138** are folded toward one another such that the second flaps **138** extend radially inward relative to the cylindrical shape of the blank **120**.

In use, the blank **120** is provided in the first configuration as described above. The blank **120** is formed into a cylinder with the first end **122** overlapping the second end **124**. In some aspects, the blank **120** is formed around a bundle **190** of cable **192**, the first flaps **136** are folded toward one another, and the second flaps **138** are folded toward one another to provide the packaging **110** for the bundle **190**. In other aspects, the blank **120** can be formed into a cylinder and either the first flaps **136** or the second flaps **136** can be folded toward one another before the packaging **110** is placed around the bundle **190**. The first retaining member **170** is adhered to the first flaps **126** to maintain the first flaps **126** in their folded configuration. Similarly, the second retaining member **180** is adhered to the second flaps **128** to maintain the second flaps **128** in their folded configuration. The second configuration of the packaging **110** provides axial strength to the cable bundle **190** such that when the packaged cable bundles are stacked for shipping and storage, the associated stresses are transferred to the packaging **110** rather than the cable, which avoids undesirable deformation of the cable.

When it is desired to use the reel-less bundle **190** of cable **192**, a technician can mount the bundle **190** on a reel **195**, as shown in FIG. **4**. In an exemplary embodiment, the reel **195** can be a two-part reel having a removable flange portion that permits the reel-less bundle **190** to be mounted on a barrel portion of the reel **195**. For example, when the removable flange portion is removed from the barrel portion, the barrel portion can be placed through the opening **172** of the first retaining member **170**, through the first side **126** of the packaging **110**, and through the reel-less bundle **190**. The technician can then remove the tab **132** from the slit **134** and, by grasping the first end **122**, the technician can remove part of the middle portion **160** by tearing along the first and second perforation lines **166**, **168** all the way to the second end **124** to create an opening about the circumference of the packaging **110**. The second side **128** of the packaging **110**, including the second retaining member **180** can be removed, and the removable flange portion can be reattached to the barrel portion. Although the first side **126** remains between a second reel flange and the bundle **190** of cable **192**, the first side **126** has only a slightly larger circumference than the bundle **190** and thus does not interfere with payout. Of course, the first side **126** can be removed if desired.

In some embodiments, the second side **128** of the packaging **110** can be left in place on the bundle **190**, and the barrel portion and removable flange portion can be configured such that either the barrel portion or the removable flange portion can be punched through the second retaining member **180** for reconnection of the removable flange portion with the barrel portion. It should be appreciated that, in some embodiments, the second retaining member **180** can be ring-shaped such that the barrel portion or the removable flange portion can be passed through an opening of the second retaining member **180** and through the second side **128**. It should also be appreciated that, in some embodiments, the second retaining member **180** can include a weakened section, for example, via perforations, that facilitates easy removal of the weakened section so that the barrel portion and the removable flange portion can be reconnected.

As shown in FIG. **4**, after the bundle **190** of cable **192** is mounted on the reel **195**, the reel **195** and bundle **190** can be placed inside of a carrying bag **199**. The carrying bag **199** may include openings for passing cable **192** for paying out, as well as other conventional features that would be readily understood by persons skilled in the art. In some exemplary embodiments, the carrying bag **199** may include a frame to facilitate paying out the cable **192**, and the reel **195** may be coupled with the frame before or after being placed into the bag.

Although several embodiments of the disclosure have been disclosed in the foregoing specification, it is understood by those skilled in the art that many modifications and other embodiments of the disclosure will come to mind to

which the disclosure pertains, having the benefit of the teaching presented in the foregoing description and associated drawings. It is thus understood that the disclosure is not limited to the specific embodiments disclosed herein above, and that many modifications and other embodiments are intended to be included within the scope of the appended claims. Moreover, although specific terms are employed herein, as well as in the claims which follow, they are used only in a generic and descriptive sense, and not for the purposes of limiting the present disclosure, nor the claims which follow.

What is claimed is:

1. A packaging arrangement for a bundle of cable, comprising:

packaging comprising a blank having a planar configuration and a cylindrical configuration;

a first end panel; and

a second end panel,

wherein, in the planar configuration, the blank extends in a longitudinal direction from a first end to a second end;

wherein the blank includes

a middle region extending from the first end to the second end in the longitudinal direction and extending between a first fold line and a second fold line in a direction perpendicular to the longitudinal direction;

a tab extending from the first end in a direction away from the second end in the longitudinal direction;

a slit spaced from the first end;

a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the second side in a direction perpendicular to the longitudinal direction; and

a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the first side in a direction perpendicular to the longitudinal direction;

wherein, in the cylindrical configuration, the blank is rolled such that the first end overlaps the second end, the slit is sized and configured to receive the tab when the blank is in the cylindrical configuration, the plurality of first flaps are folded toward one another such that the plurality of first flaps extend radially inward relative to the cylindrical configuration of the blank, and the plurality of second flaps are folded toward one another such that the plurality of second flaps extend radially inward relative to the cylindrical configuration of the blank;

wherein, when the blank is in the cylindrical configuration and the plurality of first flaps and the plurality of second flaps are folded, the first end panel is attached to the plurality of first flaps to maintain the plurality of first flaps folded, and the second end panel is attached to the plurality of second flaps to maintain the plurality of second flaps folded so as to provide packaging for a reel-less bundle of cable that prevents the cable bundle from unraveling and provide axial strength to the bundle of cable; and

wherein the middle region of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end so as to permit the packaging to be removed from the bundle of cable without a tool.

2. The packaging arrangement of claim **1**, wherein the blank is configured to provide axial crush resistance to the packaging arrangement in the cylindrical configuration.

3. The packaging arrangement of claim **1**, wherein the blank is configured to receive a bundle of cable and provide axial crush resistance to the bundle of cable in the cylindrical configuration.

4. A packaging arrangement for a bundle of cable, comprising:

a packaging blank;

wherein, in a first configuration, the blank extends in a longitudinal direction from a first end to a second end;

wherein the blank includes

a middle region extending from the first end to the second end between a first fold line and a second fold line;

a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the middle region in a direction perpendicular to the longitudinal direction; and

a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the middle region in a direction perpendicular to the longitudinal direction;

wherein, in a second configuration, the blank is rolled into a cylindrical shape such that the first end overlaps the second end, the plurality of first flaps are folded radially inward relative to the cylindrical blank, and the plurality of second flaps are folded radially inward relative to the cylindrical blank;

wherein a first end panel is configured to be attached to the folded plurality of first flaps and a second end panel is configured to be attached to the folded plurality of second flaps when the blank is in the second configuration so as to provide packaging for a reel-less bundle of cable that prevents the cable bundle from unraveling and provide axial strength to the bundle of cable; and

wherein the middle region of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end so as to permit the packaging to be removed from the bundle of cable without a tool.

5. The packaging arrangement of claim **4**, wherein the blank is configured to provide axial crush resistance to the packaging arrangement in the second configuration.

6. The packaging arrangement of claim **4**, wherein the blank is configured to receive a bundle of cable and provide axial crush resistance to the bundle of cable in the second configuration.

7. The packaging arrangement of claim **4**, wherein the blank comprises paper or fiberboard.

8. The packaging arrangement of claim **4**, wherein the plurality of first flaps are delineated by a first plurality of V-shaped notches; and

wherein the plurality of second flaps are delineated by a second plurality of V-shaped notches.

9. The packaging arrangement of claim **4**, wherein the first perforation line is spaced from the first fold line in a direction toward the second fold line, and the second perforation line is spaced from the second fold line in a direction toward the first fold line.

10. The packaging arrangement of claim 4, wherein the first perforation line is coextensive with the first fold line, and the second perforation line is coextensive with the second fold line.

11. The packaging arrangement of claim 4, wherein the first end panel and the second end panel each comprise an adhesive backed paper or a sticker.

12. A packaging arrangement for a bundle of cable, comprising:

a planar packaging blank extending in a longitudinal direction from a first end to a second end, the blank including:

a middle region extending from the first end to the second end between a first fold line and a second fold line;

a first side extending from the first end to the second end and including a plurality of first flaps extending from the first fold line in a direction away from the middle region in a direction perpendicular to the longitudinal direction; and

a second side extending from the first end to the second end and including a plurality of second flaps extending from the second fold line in a direction away from the middle region in a direction perpendicular to the longitudinal direction;

wherein, the blank is configured to be rolled into a cylindrical shape such that the first end overlaps the second end;

wherein the plurality of first flaps are configured to be folded radially inward relative to the cylindrical blank, and the plurality of second flaps are configured to be folded radially inward relative to the cylindrical blank so as to provide packaging for a reel-less bundle of cable that prevents the cable bundle from unraveling and provide axial strength to the bundle of cable; and

wherein the middle region of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end so as to permit the packaging to be removed from the bundle of cable without a tool.

13. The packaging arrangement of claim 12, further comprising:

a first end panel configured to be attached to the plurality of first flaps when folded and a second end panel configured to be attached to the plurality of second flaps when folded.

14. The packaging arrangement of claim 12, wherein the blank is configured to provide axial crush resistance to the packaging arrangement when rolled into the cylindrical shape.

15. The packaging arrangement of claim 12, wherein the blank is configured to receive a bundle of cable and provide crush resistance to the bundle of cable when rolled into the cylindrical shape.

16. The packaging arrangement of claim 12, wherein the blank comprises paper or fiberboard.

17. The packaging arrangement of claim 12, wherein the plurality of first flaps are delineated by a first plurality of V-shaped notches; and

wherein the plurality of second flaps are delineated by a second plurality of V-shaped notches.

18. The packaging arrangement of claim 12, wherein the first perforation line is spaced from the first fold line in a direction toward the second fold line, and the second perforation line is spaced from the second fold line in a direction toward the first fold line.

19. The packaging arrangement of claim 12, wherein the first perforation line is coextensive with the first fold line, and the second perforation line is coextensive with the second fold line.

20. The packaging arrangement of claim 13, wherein the first end panel and the second end panel each comprise an adhesive backed paper or a sticker.

21. The packaging arrangement of claim 12, wherein the blank includes a tab extending from the first end in a direction away from the second end in the longitudinal direction and a slit spaced from the first end; and

wherein the slit is sized and configured to receive the tab when the blank is rolled into the cylindrical shape.

22. A packaging arrangement for a bundle of cable, comprising:

a planar packaging blank extending in a longitudinal direction from a first end to a second end, the blank including:

a middle portion extending from the first end to the second end between a first fold line and a second fold line;

a first flap portion extending from the first end to the second end and extending from the first fold line in a direction away from the middle portion in a direction perpendicular to the longitudinal direction; and

a second flap portion extending from the first end to the second end and extending from the second fold line in a direction away from the middle portion in a direction perpendicular to the longitudinal direction;

wherein, the blank is configured to be rolled such that the first end overlaps the second end;

wherein the first flap portion and the second flap portion are configured to be folded radially inward relative to the rolled blank so as to provide packaging for a reel-less bundle of cable that prevents the cable bundle from unraveling and provide axial strength to the cable bundle; and

wherein the middle portion of the blank includes a first perforation line and a second perforation line, and the first and second perforation lines are configured to extend from the first end to the second end so as to permit the packaging to be removed from the bundle of cable without a tool.

23. The packaging arrangement of claim 22, further comprising:

a first end panel configured to be attached to the first flap portion when folded and a second end panel configured to be attached to the second flap portion when folded.

24. The packaging arrangement of claim 22, wherein the blank is configured to provide axial crush resistance to the packaging arrangement when rolled into a cylindrical shape.

25. The packaging arrangement of claim 22, wherein the blank is configured to receive a bundle of cable and provide crush resistance to the bundle of cable when rolled.

26. The packaging arrangement of claim 22, wherein the blank comprises paper or fiberboard.

27. The packaging arrangement of claim 22, wherein the first flap portion includes a plurality of first flaps that are delineated by a first plurality of notches; and

wherein the second flap portion includes a plurality of second flaps that are delineated by a second plurality of notches.

28. The packaging arrangement of claim 22, wherein the first perforation line is spaced from the first fold line in a direction toward the second fold line, and the second perforation line is spaced from the second fold line in a direction toward the first fold line.

29. The packaging arrangement of claim 22, wherein the first perforation line is coextensive with the first fold line, and the second perforation line is coextensive with the second fold line.

30. The packaging arrangement of claim 23, wherein the first end panel and the second end panel each comprise an adhesive backed paper or a sticker.

31. The packaging arrangement of claim 22, wherein the blank includes a tab extending from the first end in a direction away from the second end in the longitudinal direction and a slit spaced from the first end; and

wherein the slit is sized and configured to receive the tab when the blank is rolled.

* * * * *